Health Locus of Control: Beliefs in Health Care Providers in the Pacific Basin

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Abstract

As part of the strategic plan to improve preconception care, health care providers are advised to counsel women about developing a reproductive life plan. Women are asked think about whether they want to become pregnant and have children and if so, when they would like to do so. The utility of a reproductive life plan is based on the premise that an individual has control over their own health and reproduction. Less is known regarding the beliefs of health care providers which may be important for strategizing educational and training programs. We conducted this project to examine whether health care providers in the Pacific Basin region who are providing reproductive health care, believe they have control over their own health. The Multidimensional Health Locus of Control Scale was used to survey attendees of the Annual Title X Reproductive Health Conference in Saipan, Commonwealth of the Northern Marianas. The cohort of reproductive health care providers surveyed (n=21) showed high internal control scores with a mean of 29.9 (SD = 3.5) and a range of 21 to 36 (maximum score = 36) consistent with individuals who have a strong belief that their health is most influenced by their own behavior. Chance and "powerful others" scores were consistent with means noted in other studies of healthy individuals. Understanding providers' health beliefs can aid in designing and executing more effective interventions to improve reproductive health outcomes.

Background

Approximately half of all pregnancies are unplanned resulting in 2.8 million unintended pregnancies in the United States every year.[1] Due to co-existing medical conditions such as obesity, diabetes, and infectious disease, pregnancy can represent a significant source of morbidity and mortality for some women. Certain racial and ethnic groups are disproportionately affected by co-existing medical conditions and health disparities. Studies report Pacific Islander women may have a higher risk of perinatal morbidity.[2,3] Nearly 14% of all pregnancies among Pacific Islander women are complicated by diabetes.[2] One study found Pacific Islander women have more than 3.5 times higher the risk of macrosomia compared to other women.[4] Another study found Pacific Islander women had two to four times the risk of pregnancy-associated hypertension and four to six times the risk of eclampsia compared to other women.[5] Though most Pacific Islander women have healthy pregnancies, preconception care and the prevention of unwanted pregnancy is important in improving maternal and neonatal outcomes for all women. The Centers for Disease Control and Prevention (CDC) along with the American College of Obstetricians and Gynecologists (ACOG) fully endorse providing preconception care to all women of reproductive age.[6,7]

As part of the strategic plan to improve preconception care, health care providers are tasked with advising women to create a reproductive life plan.[7] A reproductive life plan incorporates the short- and long-term life goals for individuals or couples including educational and career goals. Central goals of the plan include the timing and spacing of pregnancy as well as pre-pregnancy health improvement milestones. For example, women planning pregnancy should try to optimize conditions like asthma, diabetes, and epilepsy and transition to medications that are safe and effective during pregnancy. Women planning pregnancy should work towards smoking cessation, minimize alcohol exposure, and make sure their vaccinations are up to date.[8]

The utility of a reproductive life plan is based on the premise that an individual has control over their own health and reproduction. Fatalism, defined as a perceived lack of control over life events, including health, correlates with less participation in preventative health care.[9-11] Fatalism about pregnancy, the idea that pregnancy happens when it is your time, regardless of an individual's actions, correlates with less pregnancy planning and less contraceptive use.[12] The two concepts, a reproductive life plan and fatalism about pregnancy, seem to directly conflict with each other.

We were interested in providing training and resources to health care providers in the Pacific Basin on reproductive life planning. We conducted this project to examine health care providers' perceived control over their own health. A health care provider's beliefs on what determines their own health is not the same as what they think their patients believe, nor is it the same as what their patients actually believe. However, understanding the beliefs of health care providers is important in strategizing educational and training programs.

Methods

In this cross-sectional study, we used a validated survey, the Multidimensional Health Locus of Control Scale. The survey was distributed to all attendees (n=35) of the Annual Title X Reproductive Health Conference in Saipan, Commonwealth of the Northern Marianas from April 25 to 27, 2012. Conference attendees consisted of reproductive health care providers, including physicians, registered nurses, nurse practitioners, and health educators practicing in the Pacific Basin region (Guam, Commonwealth of the Northern Marianas, American Samoa, Palau, the Federated States of Micronesia, the Republic of the Marshall Islands). The survey was administered in paper form. Participation was anonymous and voluntary, and incentives were not offered. Data was entered into SPSS version 22 (IBM, Chicago, IL) for analysis. This study was granted exempt status from the University of Hawai'i (UH) Institutional Review Board (CHS 20107).

We asked participants demographic questions on gender, race, type of health care provider, marital status, location of practice, income, education, and the number of children they had. The Multidimensional Health Locus of Control Scale consists of 18 questions (Table 1) to assess an individual's health beliefs.[13,14] The Multidimensional Health Locus of Control Scale is based on the premise that an individual believes control over their health is either external or internal. If a person believes that their health is most influenced by their own behavior, they have an internal locus of control orientation. If a person believes their health is determined by factors outside their control, they have an external locus of control orientation. Individuals with an external locus of control orientation believe their health is determined by two external factors: (1) fate, luck or chance or (2) "powerful other" such as one's doctors, family, members, or friends. The 18 questions in the Multidimensional Health Locus of Control assess the importance of three factors (1) internal control, (2) chance, and (3) powerful others in health beliefs. Respondents provided answers to each of the 18 questions using a 6-point Likert scale (strongly disagree, moderately disagree, slightly disagree, slightly agree, moderately agree, strongly agree). We instructed respondents to answer questions according to their own personal beliefs and emphasized there were no right or wrong answers.

For each of the three subscales (internal control, chance, powerful others), an individual can get a score between 6 and 36. The higher the score, the more an individual believes health is determined by that particular factor. For example, an individual who believes that positive health results from their own doing, willpower, or effort, will have a high internal control score. In contrast, if an individual believes that fate, supernatural occurrences, or other individuals determine their own health, they will have a low internal control score and a high chance and powerful others score. Other studies have demonstrated different normal values for various groups of individuals (Table 2). In general, individuals who take an active role in improving their health (ie, those who attempt smoking cessation or participate in exercise programs) have mean scores for internal control of 29-30.[15] Individuals who experience illness because of conditions like cancer have lower internal controls scores of 21-22.[16] Healthy individuals generally have chance scores of approximately 15 and powerful others scores of 19-20, while those who are ill due to conditions like cancer have higher chance scores of 19-20 and powerful others scores of 23-24.[16,17]

Results

A total of 21 out of 35 surveys (60%) distributed were returned though not all respondents answered all demographic questions (Table 3). The average age of respondents was 47 (SD = 9) years. Female respondents made up 90% (17/19) of the sample. Most respondents were married (63%) and had an average of 3 (SD = 2.0) children. The most commonly identified races were Micronesian (35%), Filipino/Filipina (25%), and Other Pacific Islander (20%). The most common location of practice was the Commonwealth of the Northern Marianas (40%) and the Federated States of Micronesia (25%). Seven of 18 respondents (39%) were registered nurses, three were health educators (16%), and three were physicians (17%). Respondents were highly educated with 68% reporting a College Degree (Bachelors or Associates Degree) and 26% reporting a graduate degree.

Internal control, chance and powerful other scores are shown in Table 4. The cohort of reproductive health care providers showed high internal control scores with a mean of 30 (SD = 4) and a range of 21 to 36. Mean chance and powerful others scores were 15 (SD = 8) and 18 (SD = 7) respectively. The proportion of respondents who gave a particular answer for each question is described in Table 1.

A majority of respondents responded that they strongly agreed with statements indicating high internal control such as, "If I take the right actions, I can stay healthy" (67%) and "If I take care of myself, I can avoid illness" (62%). A majority of respondents answered they strongly disagreed to questions suggesting chance plays a large role in health such as, "Luck plays a big part in determining how soon I will recover from an illness" (62%). A majority of respondents strongly disagreed that powerful others had a large role in health such as, "health professionals control my health" (67%).

Table 1. Multidimensional Health Locus of Control Questions. Respondents answered questions using a 6-point Likert scale (strongly disagree, moderately disagree. N=21 (not all respondents answered all questions)

	Strongly disagreed % (n)	moderately disagree % (n)	slightly disagree % (n)	slightly agree % (n)	moderately agree % (n)	strongly agree % (n)
Internal Control Questions						
If I get sick, it is my own behavior which determines how soon I get well again. (N=21)	0 (0)	5 (1)	5 (1)	14 (3)	33 (7)	43 (9)
I am in control of my health. (N=21)	5 (1)	5 (1)	0 (0)	10 (2)	29 (6)	52 (11)
When I get sick, I am to blame. (N=21)	19 (4)	5 (1)	24 (5)	10 (2)	14 (3)	29 (6)
The main thing which affects my health is what I myself do. (N=20)	0 (0)	5 (1)	5 (1)	10 (2)	25 (5)	55 (11)
If I take care of myself, I can avoid illness. (N=21)	0 (0)	0 (0)	0 (0)	5 (1)	33 (7)	62 (13)
If I take the right actions, I can stay healthy. (N=21)	5 (1)	0 (0)	0 (0)	5 (1)	24 (5)	67 (14)
Chance Questions						
No matter what I do, if I am going to get sick, I will get sick. (N=20)	20 (4)	25 (5)	5 (1)	30 (6)	10 (2)	10 (2)
Most things that affect my health happen to me by accident. (N=21)	48 (10)	19 (4)	5 (1)	(14) 3	5 (1)	10 (2)
Luck plays a big part in determining how soon I will recover from an illness. (N=21)	62 (13)	10 (2)	14 (3)	10 (2)	5 (1)	0 (0)
My good health is largely a matter of good fortune. (N=19)	43 (10)	5 (1)	0 (0)	26 (5)	11 (2)	5 (1)
No matter what I do, I 'm likely to get sick. (N=20)	40 (8)	10 (2)	10 (2)	30 (6)	5 (1)	5 (1)
If it's meant to be, I will stay healthy. (N=20)	45 (9)	15 (3)	0 (0)	25 (5)	5 (1)	10 (2)
Powerful Others						
Having regular contact with my physician is the best way for me to avoid illness. (N=20)	15 (3)	20 (4)	25 (5)	20 (4)	0 (0)	20 (4)
Whenever I don't feel well, I should consult a medically trained professional. (N=21)	19 (4)	0 (0)	26 (5)	26 (5)	14 (3)	19 (4)
My family has a lot to do with my becoming sick or staying healthy. (N=21)	33 (7)	5 (1)	14 (3)	10 (2)	29 (6)	10 (2)
Health professionals control my health. (N=21)	67 (14)	5 (1)	14 (3)	10 (2)	5 (1)	0
Whenever I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me. (N=19)	21 (4)	16 (3)	11 (2)	26 (5)	21 (4)	5 (1)
Regarding my health, I can only do what my doctor tells me to do. (N=21)	43 (9)	10 (2)	10 (2)	14 (3)	19 (4)	5 (1)

Table 2. Previously Published Norms for the Multidimensional Health Locus of Control Scale						
Sample Description	Internal Control		Chance		Powerful Others	
	Mean	SD	Mean	SD	Mean	SD
Adherers to an exercise program[18]	29.97	7.2				
Healthy female adults in the US[17]	24.84	4.50	14.93	5.21	19.76	4.49
Healthy male adults in the US[17]	25.37	5.32	16.23	6.28	20.32	5.94
Female professionals in the US[16]	23.51	5.27	15.78	4.38	16.27	5.63
Physicians[16]	24.90		16.50			
Nurses[16]	25.20		14.10			
Undergraduates[19]	32.80	7.16				
Chemotherapy patients[16]	21.83	6.49	19.31	4.56	23.93	4.95

Discussion

We found this cohort of reproductive health care providers had high internal control scores consistent with individuals who have a strong belief that their health is most influenced by their own behavior. Chance and powerful others scores were consistent with means noted in other studies of healthy individuals. Questions associated with the concept that powerful others control health, had the widest range of scores (6-32).

Family planning is an important component to women's health, especially for patients with co-existing medical conditions for whom pregnancy can cause severe morbidity and mortality. The CDC and ACOG fully endorse providing preconception care and creating a reproductive health plan for women of reproductive age.[6,7] Communicating the concept of the reproductive life plan to patients assumes health care providers who are tasked to do this believe individuals have control over their own health and reproduction. Conveying the concept of a reproductive life plan could be difficult for individuals who do not believe they are in control over their own health. We sought to use a previously validated survey to describe the amount of control health care providers thought they had over their own health. We found individuals who provide reproductive health care in the Pacific believe that their health is most influenced by their own behavior. Of note, though we did not ask specifically about the use of a reproductive life plan, those surveyed did not express high levels of health care fatalism. Other studies have demonstrated that clinicians can have an impact on the contraceptives a woman decides to use though their counseling techniques which should incorporate patient-centered decision making. We also did not assess the efficacy of health care providers in influencing the contraceptive decisions patient make. However, those surveyed did not express high levels of health care fatalism. Conveying the concept of a reproductive life plan could be difficult for individuals who do not believe they are in control over their own health.

Limitations should be noted. The population studied, reproductive health care providers working in six countries, is diverse. This study was descriptive and because of the small sample, we did not compare scores between individuals of different ages, races, nationalities or location of practice. We also focused on health locus of control and did not ask questions specific to family planning.

There is much work to do in this field of research. Future studies should examine the relationship between health locus of control and self-efficacy in contraception and preconception care to determine whether there is an association between overall health self-efficacy and reproductive health self-efficacy. Future studies should specifically examine how the beliefs of health care providers influence how they communicate with and treat their patients. It would seem logical that understanding providers' health beliefs can aid in designing and executing more appropriate clinician educational interventions. However, it is important to note that the beliefs of health care providers, who have self-selected into health care occupations, may be different than the beliefs of patients. Though we examined the beliefs of health care providers, we did not examine the beliefs of reproductive age Pacific Islander women. Little is known about the attitudes of Pacific Islander women towards reproductive health; this should be examined further.

Conflict of Interest

None of the authors identify a conflict of interest.

Disclosure

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Table 3. Demographic Characteristics of the Study Population (n=21). Not all respondents provided an answer to each demographic question

	n (%)
Mean (sd)	
Age	47.3 (8.9)
Number of children	2.6 (2.0)
Gender	
Male	2 (10.5)
Female	17 (89.5)
Ethnicity	
Hispanic	3 (20.0)
Non-Hispanic	12 (80.0)
Race	
Filipina/Filipino	5 (25.0)
Micronesian	7 (35.0)
Other Pacific Islander	4 (20.0)
Caucasian	1 (5.0)
Black	1 (5.0)
Multiracial	2 (10.0)
Type of Provider	
Physician	3 (16.7)
Nurse Practitioner/Nurse Midwife	2 (11.1)
RN	7 (38.9)
MA/LPN/CAN	3 (16.1)
Health Educator	3 (16.1)
Marital Status	
Married	12 (63.2)
Partnered	1 (5.3)
Single	6 (31.6)
Highest Education Level	
Graduate degree	5 (26.3)
College degree	13 (68.4)
High school degree	1 (5.3)
Less than high school	0 (0.0)
Location of Practice	
Commonwealth of the Northern Marianas	8 (40.0)
Federated States of Micronesia	5 (25.0)
Republic of the Marshall Islands	2 (10.0)
Palau	2 (10.0)
Other	3 (15.0)

Table 4. Mean and Median Scores for Internal Control, Chance and Powerful Others

	Mean (SD)	Median (Range)
Internal Control	29.9 (3.5)	30 (21-36)
Chance	14.5 (7.9)	11 (6-30)
Powerful Others	18.3 (7.2)	18 (6-32)

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